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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,796	03/08/2004	Tzvi Avnery	2251.2005-004	3169
21005	7590	07/27/2006	EXAMINER	
HAMILTON, BROOK, SMITH & REYNOLDS, P.C. 530 VIRGINIA ROAD P.O. BOX 9133 CONCORD, MA 01742-9133			BERMAN, JACK I	
			ART UNIT	PAPER NUMBER
			2881	

DATE MAILED: 07/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/796,796	AVNERY, TZVI	
	<b>Examiner</b> Jack I. Berman	<b>Art Unit</b> 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 05 May 2006.  
 2a) This action is **FINAL**.      2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8, 10-20 and 22-25 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1-8, 10-20 and 22-25 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 08 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|   | 6) <input type="checkbox"/> Other: _____                                    |

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 10-14, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama et al. (U. S. Patent No. 6,188,075) in view of Schonberg et al. (U. S. Patent No. 5,321,271). Takayama et al. discloses an apparatus for irradiating surfaces comprising:

a hermetically sealed (see lines 44-67 in column 4) electron beam generator (irradiation tube 27) for generating a beam of electrons, the beam of electrons exiting the electron beam generator through an exit window (irradiation window 5, 28); and a robotic device (arm robot 23) including a robotic arm (articulated expansion arm 22) for moving the beam of electrons over the surfaces to irradiate selected regions of the surfaces, the robotic device capable of controllably, continuously, and actively spacing the exit window of the electron beam generator a desired distance away from the surfaces as the electron beam generator is moved over the surfaces (see lines 18-20 in column 8). As applicant argues in the remarks filed on May 5, 2006, Takayama et al. does not teach to provide a propulsion system to propel the entire robotic device to desired locations, as is now claimed; however, Schonberg et al. teaches, at lines 28-29 in column 4, to provide wheels on an electron beam irradiation device in order to facilitate moving it from one place to another. It would have been obvious to a person having ordinary skill in the art to provide the wheels taught by Schonberg et al. on the apparatus disclosed by Takayama et al. in order to move it from place to place in the manner taught by Schonberg. It would also have been obvious to such a person to provide some kind of propulsion system so that the apparatus

could move under its own power rather than require a human operator to push or pull it to its new location. Such motorized propulsion systems are well known. At lines 5-9 in column 4, Takayama et al. teaches that the irradiation apparatus disclosed is capable of crosslinking, curing, or modifying (i.e. facilitating chemical reactions) in a coating.

Claims 3, 4, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama et al. and Schonberg et al. as applied to claims 1, 2, 10-14, and 22-25 above, and further in view of Karlen et al. (U. S. Patent No. 5,155,423). Takayama et al. only recites the robotic arm (articulated expansion arm 22) nominally, without reciting any details, so a person having ordinary skill in the art would look to known prior art for these details. Karlen et al. discloses a robotic arm comprising a horizontal rotary joint (20) for swinging the robotic arm, an upper arm member (6); a rotary shoulder joint (4) rotatably coupled to the upper arm member for raising and lowering the robotic arm; a lower arm member (10) rotatably coupled to the upper arm member by a rotary elbow joint (8), the elbow joint for raising and lowering the lower arm member relative to the upper arm member; a bracket rotatably coupled to the lower arm member by a rotary wrist joint (12), the wrist joint for swinging the bracket from side to side; and a rotary bracket joint (14) rotatably coupling a tool 16 generator to the bracket for rotating the tool. It would have been obvious to a person having ordinary skill in the art to use the Karlen et al. robotic arm as the nominal articulated expansion arm 22 recited by Takayama et al. by using the electron beam generator disclosed by Takayama et al. as Karlen et al.'s nominally recited "tool 16".

Claims 5-7 and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takayama et al. and Schonberg et al. as applied to claims 1, 2, 10-14, and 22-25 above, and

further in view of Skaalen et al. (U. S. Patent No. 4,599,030). Schonberg et al. does not teach how the wheels on the irradiation apparatus should be arranged or driven, but Skaalen et al. teaches that a four-wheeled vehicle can be made highly maneuverable by driving each wheel individually and that the arrangement of such wheels can be a first pair of rotatable wheels rotatably fixed and spaced apart from each other along a first axis, the first pair of wheels being rotatably driven; and a second pair of rotatable wheels spaced apart from each other along a second axis transverse to the first axis, the wheels of the second pair each being pivotably mounted and steerable, as is shown in Figure 8(H) wherein the rear left wheels and the front right wheels lie along the first axis and the front left wheels and rear right wheels lie along the second axis. It would have been obvious to a person having ordinary skill in the art to use the arrangement of wheels disclosed by Skaalen et al. in the Takayama et al./Schonberg et al. apparatus discussed above in order to achieve the maneuverability taught by Skaalen et al.

Claims 1-3, 8, 13-15, 20, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mihara et al. (U. S. Patent No. 6,826,254) in view of Nunan (U. S. Patent No. 4,726,046). Mihara et al. discloses an apparatus for irradiating surfaces comprising:

an electron beam generator (electron gun 9 and linear accelerator 11)for generating a beam of electrons, the beam of electrons striking a target 10 to produce an x-ray beam; and a robotic device for moving the beam of x-rays over the surfaces to irradiate selected regions of the surfaces, the robotic device including a robotic arm(manipulator 5) for maneuvering the electron beam generator and the robotic arm having a horizontal rotary joint for swinging the robotic arm (see lines 53-55 in column 3), the robotic device further including a propulsion system for propelling the robotic device along a track (rails 2) in a manner where the entire robotic device is

capable of traveling to desired locations, the robotic device capable of controllably spacing the exit window of the electron beam generator a desired distance away from the surfaces as the electron beam generator is moved over the surfaces. While Mihara et al. uses the electron beam generator only to generate x-rays, Nunan teaches at lines 3-9 in column 8 and lines 55-57 in column 12 that it is known in the art that by replacing the x-ray target with an electron window, such an electron beam generator can be used to irradiate surfaces with the electron beam itself rather than with x-rays resulting from the incidence of the electron beam on the target. It would therefore have been obvious to a person having ordinary skill in the art to use Mihara et al. apparatus to irradiate surfaces with an electron beam rather than an x-ray beam.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Li et al. (U. S. Patent No. 5,882,487) teaches to provide apparatus for decontaminating surfaces by means of irradiation on a trolley 16 to move the apparatus to a desired location. Wakalopulos et al. (U. S. Patent No. 6,140,657) teaches that electron beams can also be used for decontamination.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack I. Berman whose telephone number is (571) 272-2468. The examiner can normally be reached on Monday-Thursday (8:30-7:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

*Jack I. Berman*  
Jack I. Berman  
Primary Examiner  
Art Unit 2881

jb  
7/21/06